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ABSTRACT

This paper is a historical overview of the educational research and development setting that has been inherited by the National Institute of Education. The author identifies four major periods: a) the emergence of education as a field of study (1855-1895); b) the period of empiricism (1895-1938); c) the assumption of a pragmatic orientation; and d) the emergence of a major role for the federal government. During the first period, curriculum reformers relied upon European ideas, and the federal government collected and disseminated data. Changes based on scientific investigation and controlled experiment marked the second period, which was highlighted by the founding of John Dewey's laboratory school at the University of Chicago and the rise of education as a field of graduate study. The period from 1938 to 1954 saw the decline of research in education caused mainly by economic depression and the gradual separation of education from other areas in the arts and sciences. The Cooperative Research Act, passed by Congress in 1954, marked the beginning of a major federal role in education. In 1965, amendments to the Cooperative Research Act made possible the organization of a network of research and development (R&D) centers. Rapid growth and proliferation of responsibility for the sponsorship of R&D programs have characterized educational history since 1965. (HMD)

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INTRODUCTION

This section is a brief survey of the growth of educational research and development in the United States during the past century. It was prepared to describe the R&D setting that the new National Institute of Education will inherit. Though it is limited both to recent times and to United States efforts, we recognize that experimentation in education is world wide and is as old as the art of teaching itself.

I. The Emergence of Education as a Field of Study in the United States (1855-1895)

Education became a topic of continued and serious scholarship in the United States in the mid 1890's with the appearance of Henry Barnard's American Journal of Education. The Journal was the first periodical in this country devoted to reflections on the aims and content of education. It helped popularize educational ideas from many places--the United States, Europe, Canada, Latin America, even India and Persia. In contrast to late nineteenth century educational practice, the Journal favored a more humane pedagogy and a more practical curriculum which recognized the latest scientific and technical developments. It fostered debate of these ideas, which led, toward the end of this period, to actual testing of some of the alternatives in schools.

Barnard was also extremely influential in the creation and early shaping of the Bureau of Education, the forerunner of the present-day United States Office of Education. When "An Act to Establish a

Department of Education" was passed by Congress in 1867, its chief purpose of "collecting such statistics and facts as shall show the condition and progress of education in the several states and territories, and of diffusing information respecting the organization and management of schools and school systems, and methods of teaching" reflected Barnard's concerns and influence.

Barnard was appointed the first Commissioner of Education and served for three years. His successors, John Eston and William T. Harris, vigorously expanded Barnard's efforts to collect educational statistics and bringing together educational materials from the nations of the West. Thus, in the first major period of American educational research, the focus of curriculum reformers was largely discussion of European ideas, and the Federal role was essentially that of collecting, collating, and disseminating facts.

II. The Period of Empiricism (1895-1938)

The 1890's began a period of increasing scientific exploration of social and natural phenomena. Not surprisingly, education reflected this general mood. It became a matter for scientific investigation, controlled experiment, and rational reform. During this period Thorndike and other psychologists drew practical recommendations from studies of learning; Franklin Bobbitt and other curriculum developers revised courses of study on the basis of systematic observations of contemporary society; and George Strayer and other administrators formulated policy recommendations based on quantitative

educational data. This was also the period when William James communicated a store of practical ideas to educators, and G. Stanley Hall became a pioneer in data gathering and child study methods.

This scientific emphasis led to reforms in American education. Previously the student's chief task was to master a particular, body of knowledge through incessant drill and discipline; now his schooling became more flexible. Between 1890 and 1940, the range of instructional methods came to embrace laboratories, field trips, visual aids, and school libraries. Elective systems with many school subjects became popular, and consolidated high schools offering vocational as well as academic curricula were established. Vocational guidance programs and more general diagnostic and psychological services became frequent, and school buildings began to be designed for educational efficiency and to conform to high standards.

A host of famous educational reformers sponsored these changes--John Dewey, Thorstein Veblen, Paul Monore, and Joseph Mayer Rice, to be followed soon after by Charles H. Judd, Lewis Terman, George Strayer, and Ellwood P. Cubberley. From these men came trenchant social criticisms, new devices for data collection and analyses, and energetic surveys of school practice. They presided over the emergence of graduate study in education, notably at Teachers College of Columbia University, the University of Chicago,

and Stanford University. They set the patterns for state, city, and university research bureaus that sprang up across the country, and for laboratory schools that were modeled on the Dewey venture at the University of Chicago.

Joseph Mayer Rice is often credited as the founder of empirical scholarship in education. In an 1895 version of today's National Assessment of Educational Progress, spelling tests developed by Rice were administered to some 16,000 students. The purpose was to examine the relationship between spelling instruction and performance. Other American educators also promoted testing in schools. Students of Thorndike and Hall explored applications of Binet's method of intelligence testing. Terman showed that intelligence tests corresponded with other evidence of school success and success in life. He challenged school practices that held children to a uniform curricula and did not allow children to maximize their varied potentials. Schools came to accept the IQ as an index of what could be expected of the child, with the high IQ a predictor of scholastic success and the "subnormal" IQ indicating a need for special educational help.

Another major event in the history of educational research was the founding of John Dewey's Laboratory School at the University of Chicago in 1896. Dewey was a firm advocate of psychological research as a means of understanding education, and his laboratory school was an

attempt to work out practical techniques that others could initiate. The school was designed as a place to test educational hypotheses in practice. Laboratory schools remained popular for testing new practices throughout the beginning of the 20th century. By the late 1930's, however, educators began to favor the more natural setting of typical public schools.

The period from 1895 to 1938 also saw the rise of school surveys as the prime method of determining needed education reform. Surveys became a feature of school management with teams of professors and experienced administrators from other communities coming in to review local school systems. These studies were commissioned by superintendents who desired guidance, by other superintendents who wanted to initiate change and required ammunition for their campaign, and by lay critics who suspected that their schools were in need of reform. The US Office of Education also sponsored a number of surveys, including nationwide studies of lang-grant colleges and universities, Negro higher education, secondary schools, teacher training institutions, and school finance.

III. Educational Research Assumes a Pragmatic Action Orientation (1938-1954)

Several forces led to a decline in educational research from 1938-1954. One depressing influence was the gradual separation of the field of education from other areas in the arts and sciences which actually

had begun as early as 1900. Before that time, a fairly warm spirit of cooperation had marked the relation between academic scholars and professional educators. A rift developed between the more pragmatically-oriented educators and the more traditionally-oriented academicians, however, and by 1940 the separation was nearly complete. There were exceptions, to be sure, but the field of educational sociology, educational psychology, educational philosophy and educational history generally became specializations splintered from the main body of their disciplines.

General social and economic conditions also contributed to the decline of educational R&D. Minimal resources during depression years had to be spent on essential educational services. Later, the war, and sharp rises in enrollments after it, drew resources to locating and training teachers. When research and development did begin to revive, educational scientism of the 1920's had run its course. Data collection might identify faults, but not provide remedies, and a new emphasis on clinical psychology and mental health research was much less threatening to practitioners. The new focus allowed opposition to tradition and standardization, and set the stage for a new period of research involvement.

Thus, with education established as a separate field and data collection studies at a low ebb, research activity as an agent of change replaced the vision of research as strict empirical inquiry. A well known example of this shift is the eight year study of the Progressive Education Association. It's purpose was to determine whether subject

requirements for college entrance were justified. These requirements were eliminated in a selected group of schools and their students admitted to college without the usual prerequisites. The fact that college success did not seem impaired encouraged experimentation in new teaching and counseling procedures.

Most of the change-oriented studies were not of this large scale, however. Between the late 1930's and the early 1950's, "action research" was a new kind of activity which absorbed at least as much professional effort as more conventional inquiry and attracted far more attention in the schools. Persons seeking to change instruction set up projects in local schools under the leadership of visiting university professors. Cooperating teachers would identify some suspected inadequacy in their local program, collect facts by means of fairly unsophisticated instruments, plan some change on the basis of the facts, carry it out, and collect follow-up data. The goal of this action research was to explore new methods and content of education in order to promote change in teaching approaches. Its shortcomings lay not in this goal, but in the local emphasis and lack of sophistication and discipline of the studies. Clearly national direction and support were needed.

IV. The Emergence of a Major Federal Role (1954-Present)

1954 marked the emergence of a major role for the Federal government in educational research. In that year the 83rd Congress passed the Cooperative Research Act authorizing the Commissioner of Education to enter into financial agreements with colleges, universities, and State educational agencies for research, surveys and demonstrations in the field of education. Also in 1954, the National Science Foundation provided its first support for course content improvement activities aimed at the improvement of mathematics and science instruction in the nation's elementary and secondary schools.

The National Science Foundation was established to facilitate the improvement of education in the sciences. Immediately after the Foundation was organized, an investigation of the nature and status of science education in the United States was begun. One of the major discoveries was the gross inadequacy of instructional materials available to teachers.

The high school level was chosen by NSF as the first place to begin improvement activities. It was the earliest level at which the several sciences are typically taught as discrete and separate subjects, and thus could be dealt with separately without a massive disturbance of the educational system. In more recent years, the Foundation has moved to the support of activities at the college level and the elementary grades, as well as experimentation with computers in instruction.

The original legislation which set up the United States Office of Education had always been interpreted to include research as a major function. The passage of the Cooperative Research Act, signed by President Eisenhower on July 26, 1954, brought the research function closer to reality. Support was not provided under the Cooperative Research Act immediately following its 1954 passage, however. In June 1956, the Congress appropriated $1,020,190 under the Cooperative Research Act. Of this sum, $675,000 was earmarked for research on the education of the mentally retarded.

In the early years, Cooperative Research was expected to be responsive to the interests of researchers, rather than to exert mission-oriented leadership. Consequently, areas needing investigation frequently were under-represented in proposals submitted for consideration.

Since development and dissemination were not authorized in the original Act, research products rarely reached the classroom. "Research" was primarily of two kinds: (1) surveys or status studies, and (2) investigations by educational psychologists. "Educational research specialists...competent to evaluate proposals," as required in the legislation, were almost exclusively psychologists, as were most of the applicants.

To meet authorization requirements, the first curriculum work and some dissemination activities were justified as research components. However, classroom teachers and local school systems were not eligible for grants and hence were slow to implement the results produced by universities.

To provide for a coherent program of research in areas of major, chronic problems, two R&D centers were established in FY 1964: The Learning Research and Development Center at the University of Pittsburgh, and the Center for the Advanced Study of Educational Administration, at the University of Oregon. These were able to pull together scattered research in their mission areas, fill the gaps, and systematically pursue needed lines of additional investigation. Additional centers were added in subsequent years to investigate other areas.

In spite of the limitations inherent in the early Cooperative Research Act, the results were sufficiently promising that support

was provided under other authorizations to make additional funds available for research, development, dissemination, and training in specialized areas. These programs provided support for curriculum improvement activities in English, language arts, and the social sciences, and for research and demonstration in the area of education of handicapped children and youth and in vocational education. In addition, the National Defense Education Act provided for research and demonstrations in uses of new media for education and for foreign language studies.

The largest single factor contributing to these increases in funding for educational research and development was public concern caused by the Soviet space success in October, 1957. National Science Foundation allocations to course content improvement activities increased by nearly a factor of ten between 1958 and 1959. Appropriations for research activities to the U.S. Office of Education nearly tripled during the same time span.

These curriculum improvement efforts brought a mounting need for research products for the schools which in turn led to amendment of the Cooperative Research Act. Title IV of the Elementary and Secondary Education Act (P.L. 89-10) April 11, 1965 broadened Cooperative Research eligibility to include local school systems, profit and nonprofit organizations, and individuals; permitted use of contracts as well as grants; expanded the Act's scope from

research, surveys, and demonstrations, to include also development and dissemination, training of educational researchers, and constructing and equipping regional facilities for educational research. A major reorganization of the Office of Education, July 1, 1965, brought all the research authorizations under a single bureau, the Bureau of Research, in which Cooperative Research was to carry the burden of rounding out a research program to meet the needs in all fields and for all students. Subsequent reorganizations moved administration of five of the special authorizations to other Bureaus.

The immediate effects of 1965 Cooperative Research amendments were (1) to open the door for applications representing a broad spectrum of practical research, development, and dissemination, and (2) organizing a network of regional laboratories. The initial (FY 1966) appropriation was $50 million for research and training and $100 million over five years for facilities. These funds were used to support a growing R&D program. Initial expectations for the effects of the program were quickly sobered by the realization that development activities, which the educational enterprise sorely needed, were found to cost at least 10 times as much as other research. For example, funding major development to solve one problem such as low reading achievement requires support that would otherwise be available for separate piecemeal attacks on many different problems. With funding restraints, it was clear that only a few major development efforts could be continued at any one time.

The laboratories, during the past five years, have moved toward heavy emphasis on developing, field testing, refining, and adapting instructional materials and techniques and helping local schools implement changes but because appropriations did not rise as quickly as program expenses, the Office of Education conserved funds through reducing the number of laboratories.

Activities in educational research and development have not been exclusively lodged in NSF and USOE, however. The establishment of the Office of Economic Opportunity in 1964 added funds for research efforts focussed on the disadvantaged, on early learning, and on vocational training. The Office of Child Development was established later to operate and improve programs for early childhood education and care. Other agencies have also supported research in education and related areas, notably the National Institute of Mental Health and the National Institute of Child Health and Human Development. The Department of Defense also has played a substantial role in supporting research in education-related areas.

In sum, the last several years of educational research history have been characterized by rapid growth, a proliferation of responsibility for the sponsorship of research and development activities, and a considerable expansion of the mechanisms available for carrying out and performing such activities. The Federal leadership function has primarily been one of stimulating research proposals and monitoring those projects selected by nongovernmental experts. Though there have been attempts to move toward concentration of scarce resources upon solving a manageable number of specific problems.

The opposition of vested interests and the scarcity of talented planners in Government have hampered these efforts. Finally, another important deterrent to internally directed program efforts has been inflexibility of the typical Government agency designed to grant

money and manage grants, rather than attract and nuture individuals with talent and experience in performing research and development.

It is in this setting that HR-33 and HR-3606 call for creation of a National Institute of Education (NIE) within the Department of HEW. Secretary Richardson has announced his intention to have the new Institute independent of the Office of Education. The NIE would expand and improve the country's existing educational activities and capabilities by providing a new and flexible agency structure. It will have both an intramural research program to attract top talent and will fund external programs that are consistent with attempts to solve the major educational problems of the country. The major focus will be upon development programs based upon intensive analysis of those problems. The analysis will include research to answer critical program design questions, and before each program is certified as workable, it will have been tried in operational settings, evaluated, and revised until success can be demonstrated.

In summary, the Congress now recognized that a new agency is needed in educational R&D to attract top talent and leadership, to overcome various management hurdles, and to eliminate education's historical syndrome of trying to do too many things with too little money. The National Institute of Education is expected to become that new agency.

FOOTNOTES

1. A good deal of this paper is drawn directly from "American Scholars and Educational Progress 1855-1958," a chapter prepared originally by Lawrence Cremin which appears in Research for Tomorrow's Schools: A Disciplined Inquiry for Education, edited by Lee J. Cronbach and Patrick Suppes (New York: The Macmillian Company, 1969).

2. Other parts of the paper are drawn from: "An Historical Overview of Educational Research in the United States," a chapter in Educational Research and Development in the United States by James J. Gallagher (Washington, D.C.: The Office of Education, U.S. Department of Health, Education, and Welfare, 1969).

3. "Educational Research and Development: Its Impact and Promise," Staff Briefing Paper, USOE, October 1970.

4. Harry S. Broudy, "Historic Exemplars of the Teaching Method" in Handbook of Research on Teaching, edited by N. L. Gage (Chicago: Rand McNally and Company, 1963).

5. Harold F. Carpenter, Jr., "The First Eight Commissioners of Education," in the Graduate Review, Stanford University, School of Education, Vol. 2, 1967.

6. John Dewey, "Progressive Education and the Science of Education" quoted by Martin S. Dworkin, editor, Dewey on Education (New York: Bureau of Publications, Teachers College, Columbia University, 1959).